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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/814,985	03/31/2004	Neal R. Rueger	102-0102US	1278

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EXAMINER

KACKAR, RAM N

ART UNIT PAPER NUMBER

1763

MAIL DATE DELIVERY MODE

07/09/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/814,985

Applicant(s)

RUEGER, NEAL R.

Examiner

Ram N. Kackar

Art Unit

1763

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 May 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 and 44-70 is/are pending in the application.
- 4a) Of the above claim(s) 2, 12 and 44-70 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 3-11 and 13-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 5/24/2007 has been entered.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. **Claims 1, 3-4 and 8-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Fujimura et al (US 6007671).**

Fujimura et al discloses a plasma chamber (Fig 1-1) for detecting a sample gas by exciting it in a plasma cavity (3). Further, Fujimura et al disclose determining a flow of sample gas (for example hydrogen by actinometry- as in Col 11- lines 33-36) when combined with a reference gas (H₂O as in Fig 1, Fig 7 and Col 10 lines 57-59) when the combination is excited together in the plasma chamber. The reference gas is not disclosed passing through any process chamber. The excitation chamber is disclosed to comprise a cylindrical cavity for receiving the processing gas.

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Regarding the limitation of couplable, since the cylindrical excitation chamber shows gas inlet it is couplable to any source of gas.

Claim 10 is directed to an intended use.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. **Claims 1, 3-11 and 13-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gary Powell (US 6538734) in view of Fujimura et al (US 6007671).**

Gary Powell discloses a reaction chamber (101) for deposition or etch processing (Col 1 lines 10-20). Further, Gary Powell discloses an excitation chamber (105) for detecting a sample gas by exciting it to emit radiation representing its chemical composition (Abstract) and teaches that this excitation chamber could be coupled to the reaction chamber to analyse a sample of exhaust gas coming out of plasma processing in the reaction chamber. As a further aspect Gary Powell discloses determining a flow of unknown sample gas when combined with a known flow of reference gas (Abstract and Col 1 lines 34-37) when the combination is excited together in the excitation chamber. The excitation chamber is disclosed to comprise a cylindrical cavity for receiving the processing gas (Fig 2-235) and a reference gas (Col 1 line 33-37, Col 7 lines 31-40 and Col 8 lines 7-14). The sampled gas could be exhaust gas of a process or its representative (Col 2 lines 7-14). Further disclosed is an energy source coupled inductively to the excitation

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chamber for excitation of the gas (203), flange for processing gas (Fig 2-221), window for monitoring the plasma (237), fiber optics (208), a computer (112) to receive and analyze the spectrum and to control (Abstract). The process could be plasma or non-plasma (Col 7 lines 31-40).

As discussed above, Gary Powell teaches the presence of both reference gas and sample gas in the excitation chamber for the disclosed method of analysis but does not disclose the mechanism or plumbing needed to accomplish this.

Therefore, to provide two inlets- one dedicated for reference gas and one dedicated for sample gas- coupled to the excitation chamber so as to include reference gas with sample gas in the excitation chamber in order to get the analytical advantage according to the teaching of Gary Powell would have been obvious to one of ordinary skill in the art at the time of invention.

Having a dedicated input for reference gas has the obvious advantage that a self contained unit with a dedicated port could be designed for any number or type of reference gases and could be attached to any process chamber without any modification to it, since on a process chamber, gas inlet ports are generally specific to a certain process.

Fujimura et al discloses a plasma chamber (Fig 1-1) for detecting a sample gas by exciting it in a plasma cavity (3). Further, Fujimura et al disclose determining a flow of sample gas (for example hydrogen by actinometry- as in Col 11- lines 33-36) when combined with a reference gas (H_2O as in Fig 1, Fig 7 and Col 10 lines 57-59) when the combination is excited together in the plasma chamber. The reference gas is not disclosed passing through any process chamber. The excitation chamber is disclosed to comprise a cylindrical cavity for receiving the processing gas.

Therefore it would have been obvious for one of ordinary skill in the art at the time of invention to provide for inlets for reference gas in addition to exhaust gas to enable determination of exhaust gas according to the teaching of Gary Powell.

The limitation of “wherein the reference gas does not pass through the processing chamber” is an intended use limitation and does not point to any structural limitation. Further, claim 10 is also directed to an intended use.

Response to Arguments

Applicant's arguments filed 5/24/07 have been fully considered but they are not persuasive.

The limitation of “wherein the reference gas does not pass through the processing chamber” has been addressed before.

Regarding this limitation applicant's reliance on claim 71 (a method claim) in Gary Powell is misplaced. Gary Powell's disclosure of gases passing through a process chamber is merely an example of proving a concept and does not point to structure. There is no teaching that both gases must pass through a process chamber in order for the analysis to work. As discussed earlier, in the example (Col 7 lines 31-38) the gases pass straight through without any interaction.

What is disclosed however, is the teaching which expects both reference gas and sample gas in the same excitation space. In view of this teaching, provision of a gas inlet for reference gas would be straightforward and obvious for one of ordinary skill in the art at the time of invention.

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It is noted that the reference of Gary Powell anticipates use of this analytical technique of gas sampling under different configurations without being limited to a specific form (Col 1 lines 61-64).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ram N. Kackar whose telephone number is 571 272 1436. The examiner can normally be reached on M-F 8:00 A.M to 5:P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on 571 272 1435. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Ram Kackar
Primary Examiner AU 1763